Amendments to the Claims: This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A method comprising:

transmitting a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone.

2. (Original) The method of claim 1, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

3. (Original) The method of claim 1, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

4. (Original) The method of claim 3, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

5. (Currently amended) The method of claim 1, wherein [[said]] the transmitting comprises transmitting in a system selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.

6. (Currently amended) The method of claim 1, wherein [[said]] the transmitting comprising transmitting in a system selected from an IEEE 802.11a system, an IEEE 802.11g system, and an IEEE 802.16 system.

7. (Original) The method of claim 1, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

8. (Currently amended) A method comprising:

receiving a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone; and

performing channel estimation using [[said]] the first and second pilot symbols.

9. (Original) The method of claim 8, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

10. (Original) The method of claim 8, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

11. (Original) The method of claim 10, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

12. (Original) The method of claim 10, further comprising:

performing a frequency offset estimation operation using the first and third pilot symbols.

13. (Currently amended) The method of claim 8, wherein [[said]] the receiving comprises receiving in a system selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.

14. (Currently amended) The method of claim 8, wherein [[said]] the receiving comprising receiving in a system selected from an IEEE 802.11a system, an IEEE 802.11g system, and an IEEE 802.16 system.

15. (Original) The method of claim 8, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

16. (Currently amended) An apparatus comprising:

a ~~formatter~~ transmit section that generates ~~to generate~~ a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone.

17. (Original) The apparatus of claim 16, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

18. (Original) The apparatus of claim 16, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

19. (Original) The apparatus of claim 18, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

20. (Currently amended) The apparatus of claim 16, wherein the ~~formatter~~ transmit section ~~is operative to format~~ formats data according to a standard selected from an IEEE 802.11a standard, an IEEE 802.11g standard, and an IEEE 802.16 standard.

21. (Original) The apparatus of claim 16, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

22. (Currently amended) An apparatus comprising:

a channel estimation module ~~operative to~~ that

~~receive~~ receives a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone; and

~~perform~~ performs channel estimation using [[said]] the first and second pilot symbols.

23. (Original) The apparatus of claim 22, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

24. (Original) The apparatus of claim 22, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

25. (Original) The apparatus of claim 24, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

26. (Original) The apparatus of claim 24, further comprising:

a frequency offset estimation module to perform a frequency offset estimation operation using the first and third pilot symbols.

27. (Original) The apparatus of claim 22, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

28. (Currently amended) An OFDM (Orthogonal Frequency Division Multiplexing) pilot symbol structure comprising:

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone.

29. (Canceled)

30. (Original) The pilot symbol structure of claim 28, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

31. (Original) The pilot symbol structure of claim 30, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

32. (Original) The pilot symbol structure of claim 28, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

33. (Currently amended) An apparatus comprising:

means for generating a pilot symbol structure including

means for generating a first pilot symbol including pilot information on a first plurality of alternate tones, and

means for generating a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone.

34. (Original) The apparatus of claim 33, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

35. (Original) The apparatus of claim 33, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

36. (Original) The apparatus of claim 35, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

37. (Original) The apparatus of claim 33, wherein the means for generating is operative to format data according to a standard selected from an IEEE 802.11a standard, an IEEE 802.11g standard, and an IEEE 802.16 standard.

38. (Original) The apparatus of claim 33, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

39. (Currently amended) An apparatus comprising:

means for channel estimation~~, said means~~ including

means for receiving a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone; and

means for performing channel estimation using [[said]] the first and second pilot symbols.

40. (Original) The apparatus of claim 39, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

41. (Original) The apparatus of claim 39, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

42. (Original) The apparatus of claim 41, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

43. (Currently amended) The apparatus of claim 41, further comprising:

means for frequency offset estimation, [[said]] the means including means for performing a frequency offset estimation operation using the first and third pilot symbols.

44. (Original) The apparatus of claim 39, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

45. (Currently amended) A ~~computer program~~ computer-readable medium having instructions stored thereon, which, when executed by a processor, causes the processor to perform operations comprising:

generating a pilot symbol structure for transmission, [[said]] the pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone.

46. (Currently amended) The ~~computer program~~ computer-readable medium of claim 45, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

47. (Currently amended) The ~~computer program~~ computer-readable medium of claim 45, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

48. (Currently amended) The ~~computer program~~ computer-readable medium of claim 47, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

49. (Currently amended) The ~~computer program~~ computer-readable medium of claim 45, wherein [[said]] the generating comprises generating the pilot symbol structure for transmission in a system selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.

50. (Currently amended) The ~~computer program~~ computer-readable medium of claim 45, wherein [[said]] the generating comprises generating the pilot symbol structure for transmission in a system selected from an IEEE 802.11a system, an IEEE 802.11g system, and an IEEE 802.16 system.

51. (Currently amended) The ~~computer program~~ computer-readable medium of claim 45, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

52. (Currently amended) A ~~computer program~~ computer-readable medium having instructions stored thereon, which, when executed by a processor, causes the processor to perform operations comprising:

receiving a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone; and

performing channel estimation using [[said]] the first and second pilot symbols.

53. (Currently amended) The ~~computer program~~ computer-readable medium of claim 52, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

54. (Currently amended) The ~~computer program~~ computer-readable medium of claim 52, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

55. (Currently amended) The ~~computer program~~ computer-readable medium of claim 54, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

56. (Currently amended) The ~~computer program~~ computer-readable medium of claim 54, further comprising:

performing a frequency offset estimation operation using the first and third pilot symbols.

57. (Currently amended) The ~~computer program~~ computer-readable medium of claim 52, wherein [[said]] the receiving comprises receiving in a system selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.

58. (Currently amended) The ~~computer program~~ computer-readable medium of claim 52, wherein [[said]] the receiving comprising receiving in a system selected from an IEEE 802.11a system, an IEEE 802.11g system, and an IEEE 802.16 system.

59. (Currently amended) The ~~computer program~~ computer-readable medium of claim 52, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

60. (Currently amended) A system comprising:

one or more antennas to transmit signals; and

a transmit section to generate the signals for transmission from the one or more antennas, the transmit section ~~including~~

~~a formatter~~ operable to generate a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone.

61. (Original) The system of claim 60, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

62. (Original) The system of claim 60, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

63. (Original) The system of claim 62, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

64. (Currently amended) The system of claim 60, wherein the ~~formatter~~ transmit section is operative to format data according to a standard selected from an IEEE 802.11a standard, an IEEE 802.11g standard, and an IEEE 802.16 standard.

65. (Original) The system of claim 60, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

66. (Original) The system of claim 60, wherein the system is selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.

67. (Currently amended) A system comprising:

one or more antennas to receive signals; and

a receive section to receive the signals from the one or more antennas, the receive section including

a channel estimation module operative to

receive a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone; and

perform channel estimation using [[said]] the first and second pilot symbols.

68. (Original) The system of claim 67, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

69. (Original) The system of claim 67, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

70. (Original) The system of claim 69, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

71. (Original) The system of claim 69, further comprising:

a frequency offset estimation module to perform a frequency offset estimation operation using the first and third pilot symbols.

72. (Original) The system of claim 67, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

73. (Original) The system of claim 67, wherein the system is selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.

74. (Currently amended) A system comprising:

means for transmitting signals in a wireless channel; and

means for generating the signals for transmission, [[said]] the means including

means for generating a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone.

75. (Original) The system of claim 74, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

76. (Original) The system of claim 74, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

77. (Original) The system of claim 76, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

78. (Original) The system of claim 74, wherein the means for generating the pilot symbol structure is operative to format data according to a standard selected from an IEEE 802.11a standard, an IEEE 802.11g standard, and an IEEE 802.16 standard.

79. (Original) The system of claim 74, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

80. (Original) The system of claim 74, wherein the system is selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.

81. (Currently amended) A system comprising:

means for receiving signals from a wireless channel; and

means for estimating [[said]] the wireless channel~~, said means~~ including

means for receiving a pilot symbol structure including

a first pilot symbol including pilot information on a first plurality of alternate tones, and

a second pilot symbol including pilot information on a second plurality of alternate tones, wherein the tones in the second plurality of alternate tones and the first plurality of alternate tones are on opposite sides of and a same distance from a [[DC]] tone; and

means for performing channel estimation using [[said]] the first and second pilot symbols.

82. (Original) The system of claim 81, wherein the first pilot symbol and second pilot symbol comprise OFDM (Orthogonal Frequency Division Multiplexing) symbols.

83. (Original) The system of claim 81, wherein the pilot symbol structure further includes a third pilot symbol, the third pilot symbol being identical to the first pilot symbol.

84. (Original) The system of claim 83, wherein the third pilot symbol is between the first pilot symbol and the second pilot symbol.

85. (Currently amended) The system of claim 83, further comprising:

means for frequency offset estimation, [[said]] the means including means for performing a frequency offset estimation operation using the first and third pilot symbols.

86. (Original) The system of claim 81, wherein in the first and second pilot symbols, the tones not containing pilot information are nulled out.

87. (Original) The system of claim 81, wherein the system is selected from a multiple-in-multiple-out (MIMO) system, a single-in-multiple-out (SIMO) system, a multiple-in-single-out (MISO) system, and a single-in-single-out (SISO) system.